OIPE IAP62 APR 20 2006 PATENT & TRADEMARK OFFICE

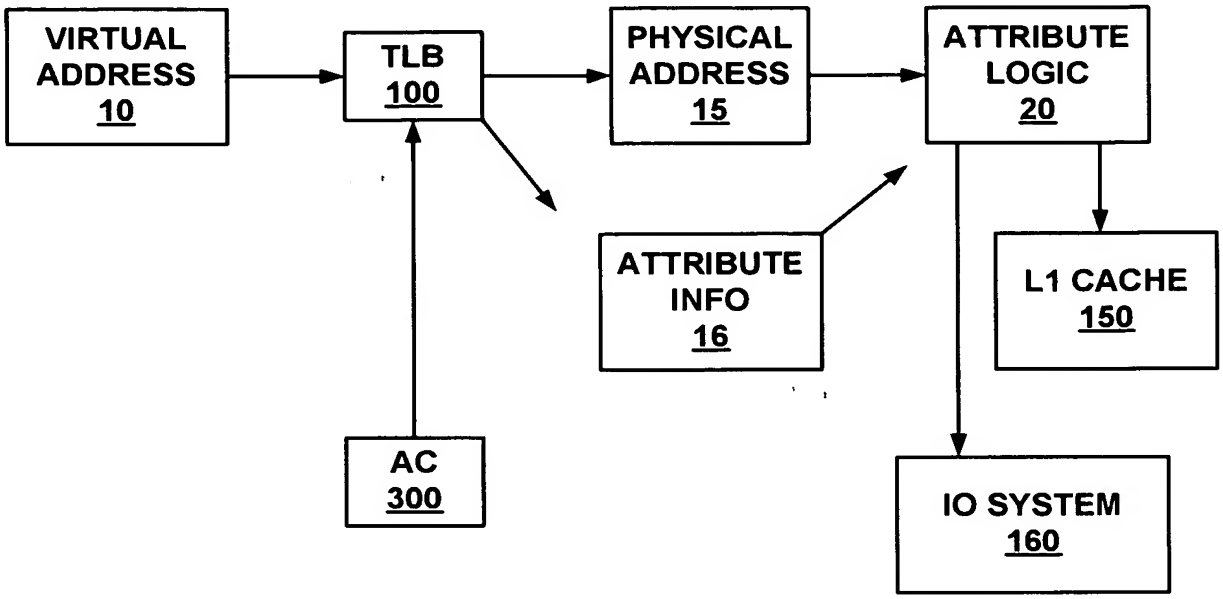

FIGURE 1

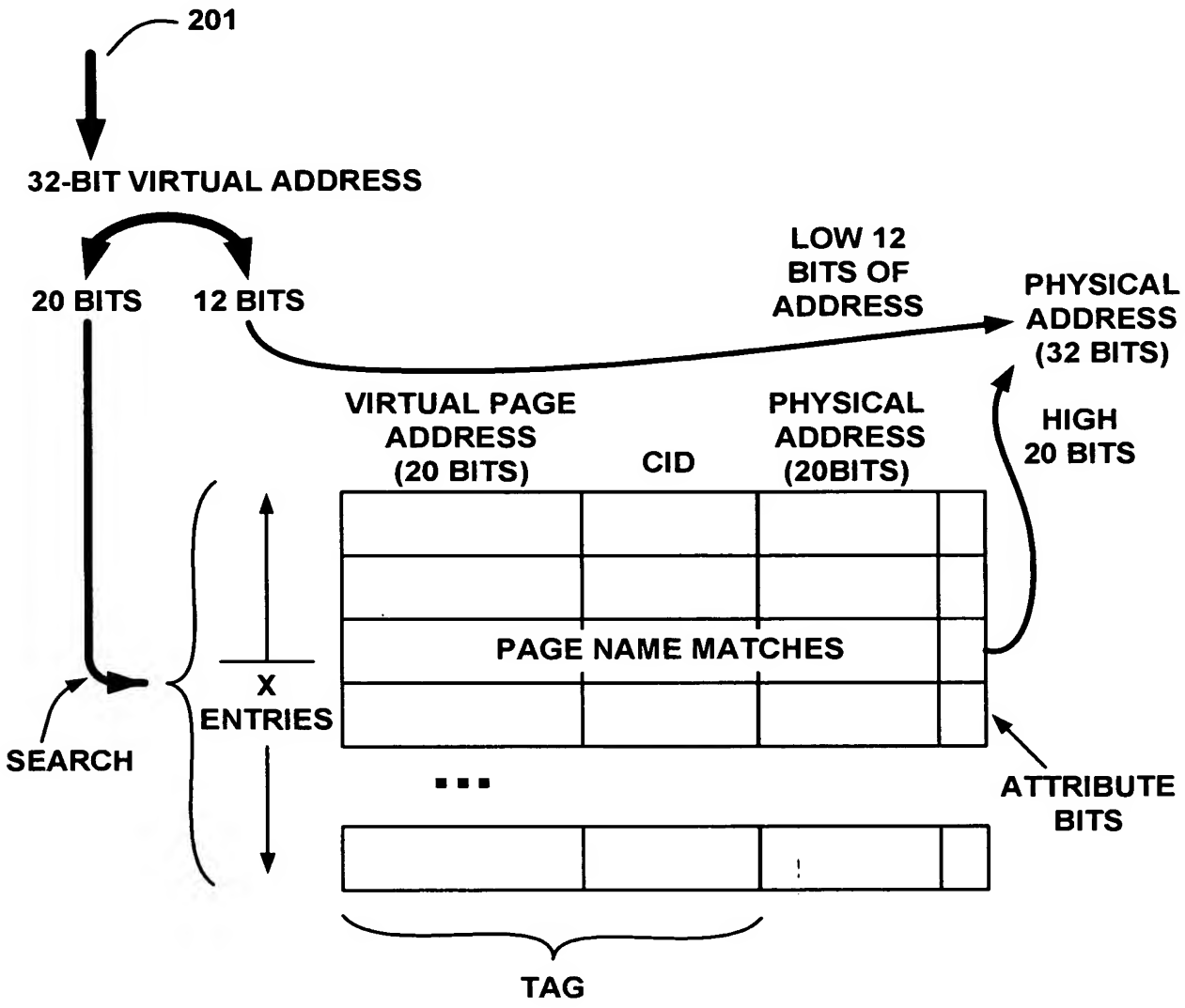
100
201
32-BIT VIRTUAL ADDRESS
20 BITS
12 BITS
LOW 12 BITS OF ADDRESS
PHYSICAL ADDRESS (32 BITS)
HIGH 20 BITS
VIRTUAL PAGE ADDRESS (20 BITS)
CID
PHYSICAL ADDRESS (20BITS)
PAGE NAME MATCHES
X ENTRIES
SEARCH
ATTRIBUTE BITS
TAG

FIGURE 2

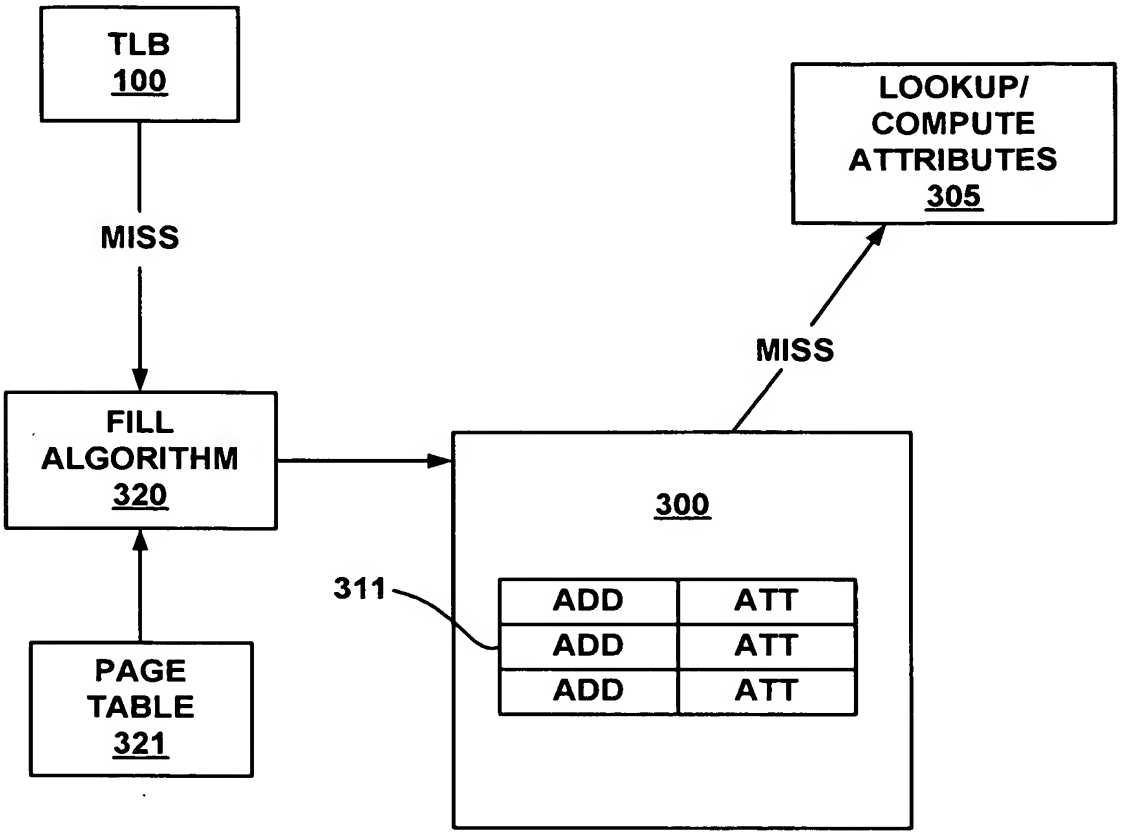
TLB
100
MISS
FILL
ALGORITHM
320
PAGE
TABLE
321
LOOKUP/
COMPUTE
ATTRIBUTES
305
MISS
300
311
ADD
ATT
ADD
ATT
ADD
ATT

FIGURE 3

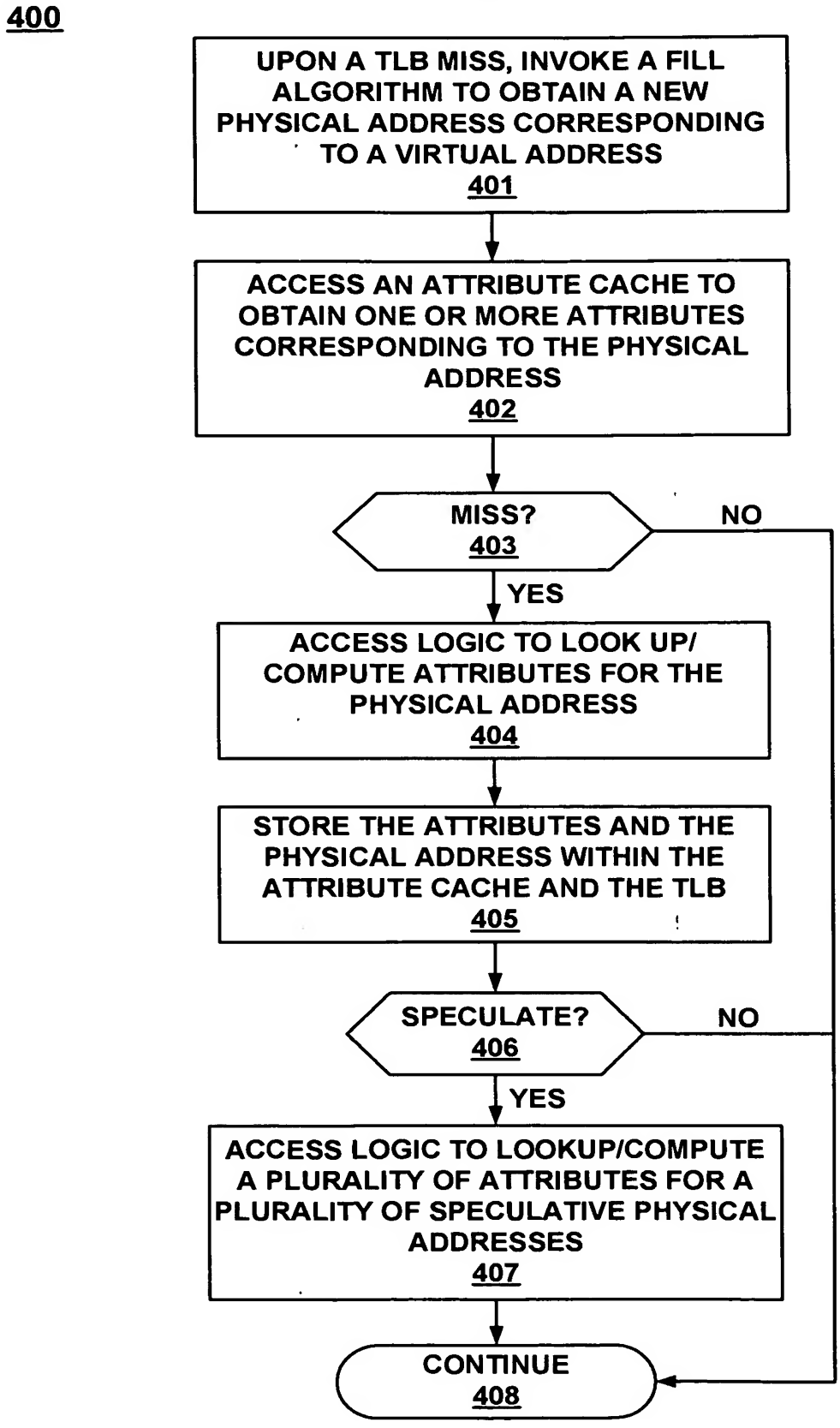
400
UPON A TLB MISS, INVOKE A FILL ALGORITHM TO OBTAIN A NEW PHYSICAL ADDRESS CORRESPONDING TO A VIRTUAL ADDRESS
401
ACCESS AN ATTRIBUTE CACHE TO OBTAIN ONE OR MORE ATTRIBUTES CORRESPONDING TO THE PHYSICAL ADDRESS
402
MISS?
403
NO
YES
ACCESS LOGIC TO LOOK UP/ COMPUTE ATTRIBUTES FOR THE PHYSICAL ADDRESS
404
STORE THE ATTRIBUTES AND THE PHYSICAL ADDRESS WITHIN THE ATTRIBUTE CACHE AND THE TLB
405
SPECULATE?
406
NO
YES
ACCESS LOGIC TO LOOKUP/COMPUTE A PLURALITY OF ATTRIBUTES FOR A PLURALITY OF SPECULATIVE PHYSICAL ADDRESSES
407
CONTINUE
408

FIGURE 4

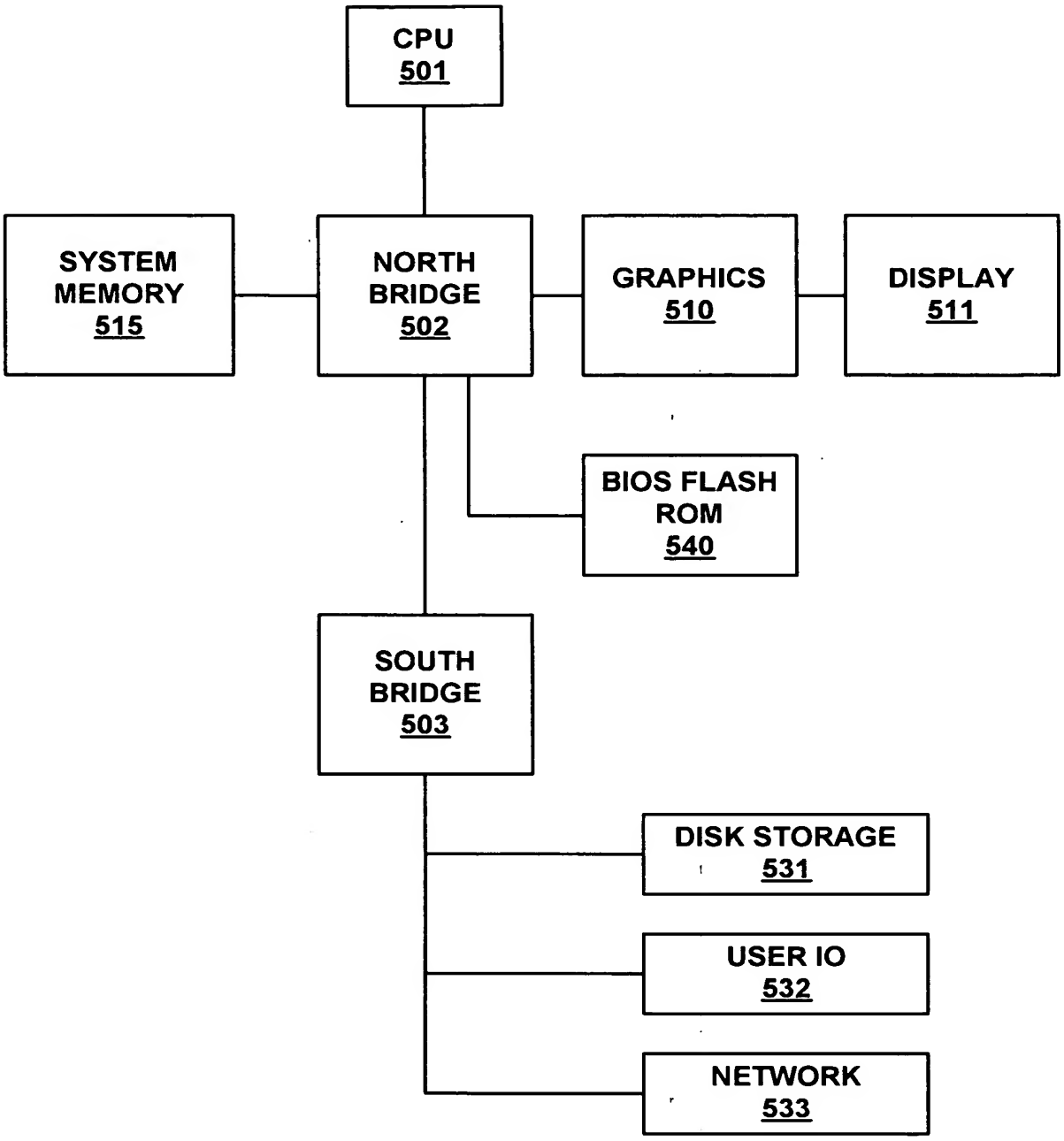
500
CPU
501
SYSTEM MEMORY
515
NORTH BRIDGE
502
GRAPHICS
510
DISPLAY
511
BIOS FLASH ROM
540
SOUTH BRIDGE
503
DISK STORAGE
531
USER IO
532
NETWORK
533

FIGURE 5

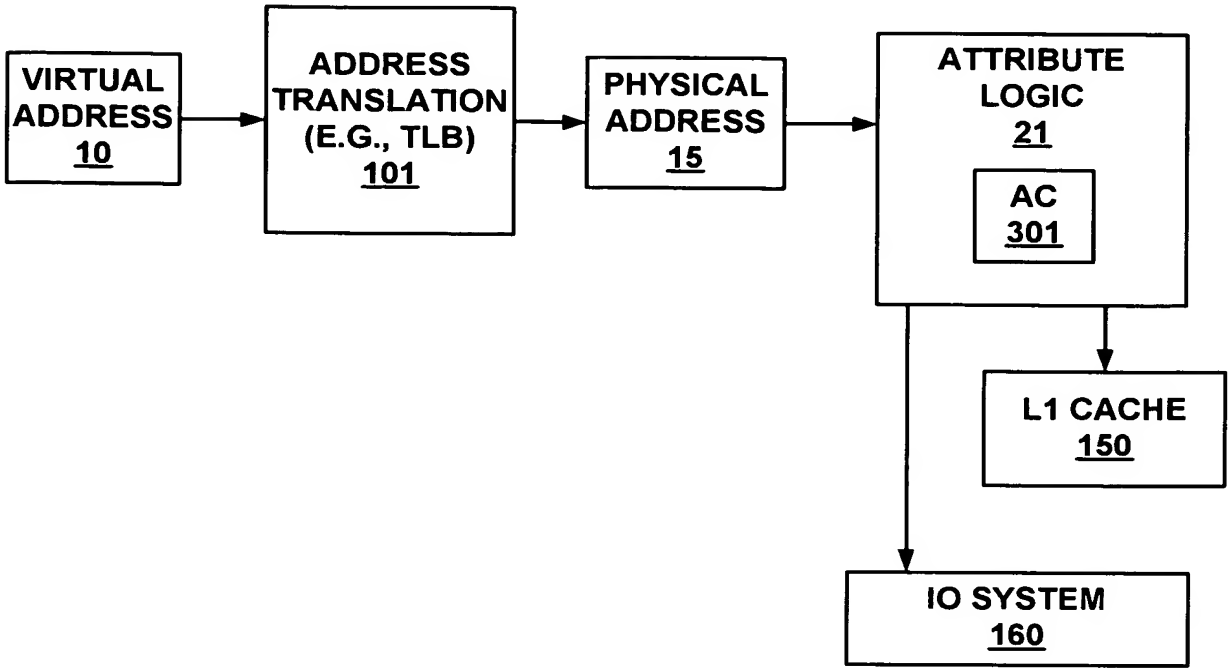

FIGURE 6

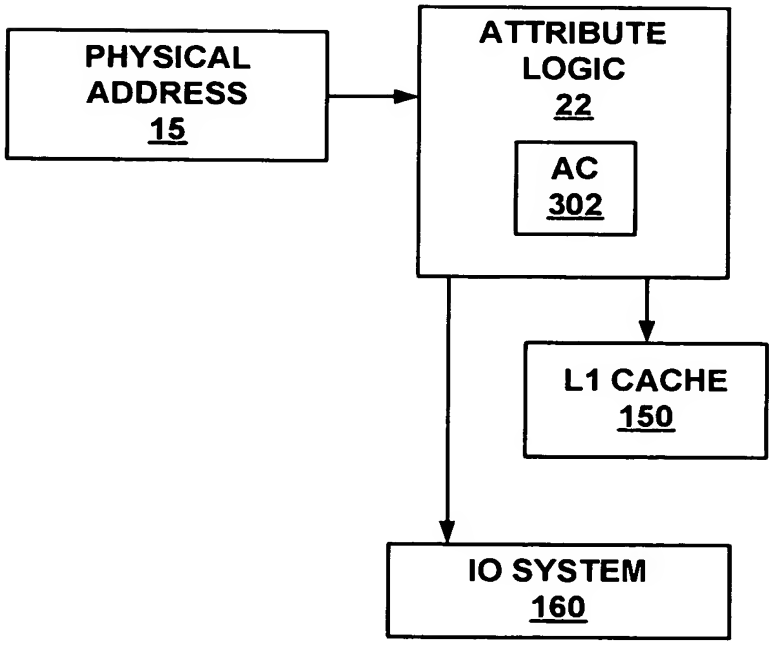

FIGURE 7